

IN THE CLAIMS:

1        1. (Currently Amended) A time managing apparatus that manages times clocked by  
2        a plurality of timer modules in apparatuses connected to each other on a network, the time  
3        managing apparatus comprising:

4                an information receiving means for receiving presetting information which  
5        contains (i) event start time information that indicates a start time at which one or more events  
6        should be started by two or more apparatuses on the network, and (ii) module identifier of the  
7        timer module, and for each event, an apparatus identifier, identifying the apparatus that should  
8        execute the event from outside;

9                ~~a holding means for holding event start time information that indicates an event~~  
10      ~~start time at which one or more events should be started by two or more apparatuses on the~~  
11      ~~network the presetting information received by the information receiving means;~~

12                a time requesting means for requesting a timer module, which is identified by the  
13        module identifier held by the holding means, to transmit a standard time;

14                a time receiving means for receiving the standard time, from the timer module  
15        requested by the time requesting means, to transmit the standard time;

16                a judging means for judging whether the event start time is reached, by comparing  
17        the received standard time, received by the time receiving means, with the event start  
18        time, indicated by the event start time information held by the holding means; and

19                an instructing means, responsive to the judging means judging that the event start  
20        time is reached, for identifying the two or more apparatuses, by apparatus identifiers held by the

21     holding means, and instructing the two or more apparatuses to start executing the one or more  
22     events when the judging means judges that the event start time is reached.

1               2.     (Cancelled)

1               3.     (Currently Amended) The time managing apparatus of claim 2 1, wherein  
2                      when the judging means judges that the event start time is reached, the instructing  
3                      means transmits triggers [for the one or more events] to the two or more apparatuses so that the  
4                      two or more apparatuses start executing the one or more events simultaneously.

1               4.     (Currently Amended) The time managing apparatus of claim 2 1, wherein  
2                      the presetting information, received by the information receiving means and held  
3                      by the holding means, further contains, for each event, (a) event type information indicating an  
4                      event type and (b) an apparatus identifier of an apparatus that should execute the event, and  
5                      when the judging means judges that the event start time is reached, the instructing  
6                      means transmits pieces of event type information corresponding which, held by the holding  
7                      means, corresponds to the one or more events to apparatuses having apparatus identifiers  
8                      corresponding to the one or more events, so that the apparatuses start executing the one or more  
9                      events simultaneously.

1               5.     (Currently Amended) The time managing apparatus of claim [[4]] 3 further  
2                      comprising:

3           a presetting information receiving means for receiving presetting information  
4    from outside and getting the holding means to hold the received presetting information; and  
5            a module identifier storage means for storing module identifiers by correlating the  
6    module identifiers with at least one of event type information and apparatus identifiers, the  
7    module identifiers being received by the presetting information receiving means together with  
8    the presetting information, wherein

9            if the presetting information receiving means receives at least one of a piece of  
10   event type information and an apparatus identifier together with the presetting information,  
11   without receiving a module identifier, the presetting information receiving means searches the  
12   module identifier storage means for a module identifier that correlates with the received piece of  
13   event type information and/or apparatus identifier, and if the presetting information receiving  
14   means finds such a module identifier, the presetting information receiving means allows the  
15   found module identifier to be selected automatically.

1       6. (Currently Amended) A time managing apparatus that manages times clocked by  
2    a plurality of timer modules in apparatuses connected to each other on a network, the time  
3   managing apparatus comprising:

4            a presetting information receiving means for receiving from outside (a) event start  
5   time information that indicates an event start time at which one or more events should be started  
6   by two or more apparatuses on the network, (b) event type information indicating an event type  
7   for each of the one or more events, and (c) apparatus identifiers of apparatuses that should  
8   execute the one or more events, and (d) a piece of management information that corresponds to  
9   the event start time and is used to manage a time clocked by a timer module;

10           a holding means for holding the event start time information, apparatus identifier,  
11       and piece of management information received by the presetting information receiving means;  
12           the time output requesting means for requesting the timer module corresponding  
13       to the piece of management information held by the holding means to output a standard time;  
14           a time receiving means for receiving [[a]] the standard time from [[a]] the timer  
15       module, requested by the time output requesting means, to output the standard time;  
16           a time managing means for managing the received standard time, received by the  
17       time receiving means, by storing the standard time together with the piece of management  
18       information held by the holding means, in correspondence with the timer module;  
19           a presetting information transmitting means for transmitting, the received event  
20       start time information and the piece of management information held by the holding means, and  
21       event type information to the apparatuses that are identified by the received apparatus identifiers  
22       held by the holding means;  
23           a standard time acquisition request receiving means for receiving a standard time  
24       acquisition request together with a piece of management information from each of the  
25       apparatuses; and  
26           a standard time transmitting means for transmitting the standard time to each of  
27       the apparatuses, a standard time that is identified by the piece of management information  
28       attached to the standard time acquisition request received by the standard time acquisition  
29       request receiving means.

1           7.       (Currently Amended) The time managing apparatus of claim 6, wherein

2           ~~the time managing means manages the times clocked by the plurality of timer~~  
3    modules using different pieces of management information assigned to the plurality of timer  
4    modules,

5           the presetting information receiving means further receives a piece of  
6    management information that corresponds to the received event start time event type information  
7    indicating an event type for each of the one or more events,

8           ~~the time receiving means receives a standard time from a timer module~~  
9    corresponding to the received piece of management information, the holding means further holds  
10   the event information received by the presetting information receiving means, and

11          the presetting information transmitting means further transmits the received piece  
12    of management information to the apparatuses event type information held by the holding means,

13          ~~the standard time acquisition request receiving means receives a standard time~~  
14    acquisition request and a piece of management information attached to the standard time  
15    acquisition request, from each of the apparatuses, and

16          ~~the standard time transmitting means transmits, to each of the apparatuses, the~~  
17    standard time received from the timer module corresponding to the received piece of  
18    management information.

1           8.       (Cancelled)

1           9.       (Currently Amended) The time managing apparatus of claim 8 7 further  
2    comprising:

3                   a management information storage means for storing the piece of management  
4 information received by the presetting information receiving means, by correlating the piece of  
5 management information with at least one of a piece of event type information and two or more  
6 apparatus identifiers, wherein

7                   if the presetting information receiving means receives at least one of a piece of  
8 event type information and an apparatus identifier, without receiving management information,  
9 the presetting information receiving means searches the management information storage means  
10 for a piece of management information that correlates with the received piece of event type  
11 information and/or apparatus identifier, and if the presetting information receiving means finds  
12 such a piece of management information, the presetting information receiving means allows the  
13 found piece of management information to be selected automatically.

1       10. (Currently Amended) A time managing apparatus that manages times clocked by  
2 a plurality of timer modules in apparatuses connected to each other on a network, the time  
3 managing apparatus comprising:

4                   a presetting information receiving means for receiving from outside (a) event start  
5 time information that indicates an event start time at which one or more events should be started  
6 by two or more apparatuses on the network, (b) a module identifier of a timer module, (c) event  
7 type information indicating an event type for each of the one or more events, and (d) apparatus  
8 identifiers of apparatuses that should execute the one or more events;

9                   a holding means for holding the event start time information, module identifier,  
10 event type information, and apparatus identifier received by the presetting information receiving  
11 means;

12           a time output requesting means for requesting the timer module which is  
13    identified by the received module identifier, held by the holding means, to output a standard  
14    time;

15           a time receiving means for receiving the standard time from the timer module;  
16    and

17           a presetting information transmitting means for transmitting the received event  
18    start time information, and event type information, and ~~transmitting~~ the standard time, held by  
19    the holding means, to the apparatuses identified by the received apparatus identifiers held by the  
20   holding means..

1       11. (Currently Amended) The time managing apparatus of claim 10 further  
2    comprising:

3           a module identifier storage means for storing the received module identifier by  
4    correlating the module identifier with at least one of a piece of event type information and two or  
5    more apparatus identifiers, wherein

6           if the presetting information receiving means receives at least one of a piece of  
7    event type information and an apparatus identifier, without receiving a module identifier, the  
8    presetting information receiving means searches the module identifier storage means for a  
9    module identifier that correlates with the received piece of event type information and/or  
10   apparatus identifier, and if the presetting information receiving means finds such a module  
11   identifier, the presetting information receiving means allows the found module identifier to be  
12   selected automatically.

1           12. (Currently Amended) A time managing apparatus that manages times clocked by  
2       a plurality of timer modules in apparatuses connected to each other on a network, the time  
3       managing apparatus comprising:

4                 a designation receiving means for receiving designation by a user of a timer  
5       module among the plurality of timer modules, the timer module being ~~to be~~ used as a standard  
6       timer module for synchronization;

7                 a time requesting means for requesting the designated timer module to output a  
8       standard time;

9                 a time receiving means for receiving the standard time from the requested timer  
10      module; and

11                 a time transmitting means for transmitting the received standard time to the other  
12      timer modules among the plurality of timer modules, excluding the timer module that output the  
13      standard time, instructing the other timer modules to synchronize times thereof with the  
14      transmitted standard time.

1           13. (Currently Amended) A time managing apparatus that manages times clocked by  
2       a plurality of timer modules in apparatuses connected to each other on a network, the time  
3       managing apparatus comprising:

4                 a presetting information receiving means for receiving (a) event start time  
5       information that indicates an event start time at which one or more events should be started by  
6       two or more apparatuses on the network, (b) a piece of management information, and (c) event  
7       type information indicating an event type for each of the one or more events, from an apparatus

8 that vicariously manages the times clocked by the plurality of timer modules using different  
9 pieces of management information assigned to the plurality of timer modules;

10 a holding means for holding the received event start time information, piece of  
11 management information, and event type information;

12 a time acquisition request transmitting means for transmitting to the apparatus a  
13 time acquisition request with the received piece of management information attached thereto; a  
14 time receiving means for receiving from the apparatus a standard time identified by the  
15 transmitted piece of management information;

16 a judging means for judging whether the event start time is reached by comparing  
17 the received standard time with the event start time indicated by the event start time information  
18 held by the holding means; and

19 an executing means for starting to execute an event that is indicated by the event  
20 type information held by the holding means when the judging means judges that the event start  
21 time is reached.

1 14. (Currently Amended) A time managing apparatus that manages times clocked by  
2 a plurality of timer modules in apparatuses connected to each other on a network, the time  
3 managing apparatus comprising:

4 a time clocking means for clocking a local time for the time managing apparatus  
5 itself;

6 a presetting information receiving means for receiving (a) event start time  
7 information that indicates an event start time at which one or more events should be started by  
8 two or more apparatuses on the network, (b) event type information indicating an event type for

9 each of the one or more events, from an apparatus on the network, the presetting information  
10 receiving means also continuously receiving a standard time from a time module;

11 a time difference calculating means for calculating a time difference between the  
12 local time received from the time clocking means and the standard time received by the  
13 presetting information receiving means;

14 a holding means for holding the received event start time information and type  
15 information and the time difference time calculated time by the difference calculating means;

16 a judging means for continuously judging whether the event start time is reached  
17 by continuously receiving the local time from the time clocking means, acquiring a corrected  
18 time by correcting the received local time using ~~the received local time and~~ the time difference  
19 held by the holding means, and comparing the continuously acquired corrected time with the  
20 event start time indicated by the event start time information held by the holding means; and

21 an executing means for starting to execute an event that is indicated by the event  
22 type information held by the holding means when the judging means judges that the event start  
23 time is reached.

1 15. (Currently Amended) A time managing method for a time managing apparatus  
2 that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3 other on a network, the time managing apparatus comprising a recording medium, the time  
4 managing method comprising the steps:

5 a presetting information receiving step for receiving presetting information which  
6 contains (i) event start time information that indicates an event start time at which one or more  
7 events should be started by two or more apparatuses on the network, and (ii) a module identifier

8       of the time module, and for each event, an apparatus identifier of an apparatus that should  
9       execute the event;

10            a holding means step for holding, in the recording medium, the presetting  
11       information received by the presetting information receiving step; event start time information  
12       that indicates an event start time at which one or more events should be started by two or more  
13       apparatuses on the network, and the time managing method comprising:

14            a time requesting step for requesting a timer module, which is identified by the  
15       module identifier held in the recording medium, to transmit a standard time;

16            a time receiving step for receiving the standard time, from the timer module  
17       requested by the time requesting step, to transmit the standard time;

18            a judging step for judging whether the event start time is reached, by comparing  
19       the received standard time with the event start time indicated by the event start time information  
20       held in the recording medium; and

21            an instructing step responsive to the judging step judging that the event start time  
22       is reached for identifying the two or more apparatuses by apparatus identifiers and instructing the  
23       two or more apparatuses to start executing the one or more events. when the judging step judges  
24       that the event start time is reached.

1           16. (Currently Amended) A time managing method for a time managing apparatus  
2       that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3       other on a network, the time managing method apparatus comprising[:] a recording medium, the  
4       time managing method comprising the steps:

5           a presetting information receiving step for receiving from outside (a) event start  
6       time information that indicates an event start time at which one or more events should be started  
7       by two or more apparatuses on the network, (b) ~~event type information indicating an event type~~  
8       ~~for each of the one or more events, and (c)~~ apparatus identifiers of apparatuses that should  
9       execute the one or more events and (c) a piece of management information that corresponds to  
10      the event start time and is used to manage a time clocked by a time module;

11           a holding step for holding the event start time information, apparatus identifiers,  
12      and piece of management information received by the presetting information receiving step;

13           a time output requesting step for requesting the timer module corresponding to the  
14      piece of management information to output a standard time;

15           a time receiving step for receiving [[a]] the standard time from [[a]] the timer  
16      module requested by the time output requesting step to output the standard time;

17           a time managing step for managing the received standard time by storing the  
18      stored time together with the piece of management information, in correspondence with the timer  
19      module;

20           a presetting information transmitting step for transmitting the received event start  
21      time information and event type the piece of management information to the apparatuses that are  
22      identified by the received apparatus identifiers;

23           a standard time acquisition request receiving step for receiving a standard time  
24      acquisition request together with a piece of management information from each of the  
25      apparatuses; and

26           a standard time transmitting step for transmitting the standard time to each of the  
27      apparatuses a standard time that is identified by the piece of management information attached to

28     the standard time acquisition request received by the standard time acquisition request receiving  
29     step

1       17. (Currently Amended) A time managing method for a time managing apparatus  
2     that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3     other on a network, the time manager apparatus including a recording medium, the time  
4     managing method comprising the steps:

5              a presetting information receiving step for receiving from outside (a) event start  
6     time information that indicates an event start time at which one or more events should be started  
7     by two or more apparatuses on the network, (b) a module identifier of a timer module, (c) event  
8     type information indicating an event type for each of the one or more events, and (d) apparatus  
9     identifiers of apparatuses that should execute the one or more events;

10             a holding step for holding, in the recording medium, the event start time  
11     information, module identifiers, event type information, and apparatus identifiers received by the  
12     presetting information receiving step;

13             a time output requesting step for requesting the timer module which is identified  
14     by the received module identifier held in the recording medium to output a standard time;

15             a time receiving step for receiving the standard time from the timer module  
16     requested by the time output requesting step to output the standard time; and

17             a presetting information transmitting step for transmitting the received event start  
18     time information, and event type information, and transmitting the standard time, to the  
19     apparatuses identified by the received apparatus identifiers held in the recording medium.

1           18. (Currently Amended) A time managing method for a time managing apparatus  
2 that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3 other on a network, the time managing method comprising:

4                 a designation receiving step for receiving designation by a user of a timer module  
5 among the plurality of timer modules, the timer module being ~~to be~~ used as a standard timer  
6 module for synchronization;

7                 a time requesting step for requesting the designated timer module to output a  
8 standard time;

9                 a time receiving step for receiving the standard time from the requested timer  
10 module; and

11                 a time transmitting step for transmitting the received standard time to the other  
12 timer modules among the plurality of timer modules excluding the timer module that output the  
13 standard time, instructing the other timer modules to synchronize times thereof with the  
14 transmitted standard time.

1           19. (Currently Amended) A time managing method for a time managing apparatus  
2 that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3 other on a network, the time managing apparatus including a recording medium the time  
4 managing method comprising the steps:

5                 a presetting information receiving step for receiving (a) event start time  
6 information that indicates an event start time at which one or more events should be started by  
7 two or more apparatuses on the network, (b) a piece of management information, and (c) event

8 type information indicating an event type for each of the one or more events, from an apparatus  
9 that vicariously manages the times clocked by the plurality of timer modules using different  
10 pieces of management information assigned to the plurality of timer modules;

11 a holding step for holding, in the recording medium, the received event start time  
12 information, piece of management information, and event type information received by the  
13 presetting information receiving step;

14 a time acquisition request transmitting step for transmitting ~~to the apparatus~~ a time  
15 acquisition request with the received piece of management information attached thereto;

16 a time receiving step for receiving from the apparatus a standard time identified  
17 by the transmitted piece of management information;

18 a judging step for judging whether the event start time received in the time  
19 receiving step is reached by comparing the received standard time with the event start time  
20 indicated by the event start time information; and

21 an executing step for starting to execute an event that is indicated by the event  
22 type information ~~held by the holding step~~ when the judging step judges that the event start time  
23 is reached.

1 20. (Currently Amended) A time managing method for a time managing apparatus  
2 that manages times clocked by a plurality of timer modules in apparatuses connected to each  
3 other on a network, the time managing apparatus comprising including a recording medium and

4 a time clocking means for clocking a local time for the time managing apparatus  
5 itself, and

6 the time managing method comprising[[;]] the steps:

7           a presetting information receiving step for receiving (a) event start time  
8 information that indicates an event start time at which one or more events should be started by  
9 two or more apparatuses on the network, (b) event type information indicating an event type for  
10 each of the one or more events, from an apparatus on the network, the presetting information  
11 receiving step also continuously receiving a standard time from a time module;

12           a time difference calculating step for calculating a time difference between the  
13 local time received from the time clocking means and the standard time received by the  
14 presetting information receiving step;

15           a holding step for holding in the receiving medium, the received event start time  
16 information and type information received in the presetting information receiving step and the  
17 calculated time difference calculated by the difference calculating step;

18           a judging step for continuously judging whether the event start time is reached by  
19 receiving the local time from the time clocking ~~means~~ step, acquiring a corrected time by  
20 connecting the received local time using ~~the received local time and the time difference held in~~  
21 the recording medium, and comparing the continuously acquired corrected time with the event  
22 start time indicated by the event start time information; and

23           an executing step for starting to execute an event that is indicated by the event  
24 type information held ~~by the holding means~~ in the recording medium when the judging ~~means~~  
25 step judges that the event start time is reached.

1           21-26. (Cancelled)

1           27. (New) An apparatus comprising a machine readable medium containing  
2 instructions which, when executed by a machine, cause the machine to perform operations  
3 comprising:

4           receiving presetting information, which contains, as a pair, (i) event start time  
5 information that indicates an event start time at which one or more events should be started by  
6 two or more apparatuses on the network and (ii) a module identifier of the timer module and for  
7 each event, an apparatus identifier of an apparatus that should execute the event, from outside;

8           holding the presetting information received;

9           requesting a timer module, which is identified by the module identifier being held  
10 to transmit a standard time;

11           receiving the standard time from the timer module requested to transmit the  
12 standard time;

13           judging whether the event start time is reached, by comparing the standard time  
14 received with the event start time indicated by the event start time information; and  
15           responsive to the judging step judging that the event start time is reached,  
16 identifying the two or more apparatuses by apparatus identifiers being held and instructing the  
17 two or more apparatuses to start executing the one or more events.

1           28. (New) An apparatus comprising a machine readable medium containing  
2 instructions which, when executed by a machine, cause the machine to perform operations  
3 comprising:

4           receiving from outside (a) event start time information that indicates an event start  
5    time at which one or more events should be started by two or more apparatuses on the network,  
6    (b) apparatus identifiers of apparatuses that should execute the one or more events, and (c) a  
7    piece of management information that corresponds to the event start time and is used to manage  
8    a time clocked by a timer module;

9           holding the event start time information, apparatus identifiers, and piece of  
10   management information received;

11          requesting the timer module corresponding to the piece of management  
12   information being held;

13          receiving the standard time from the timer module requested to output the  
14   standard time;

15          managing the standard time received by storing the standard time together with  
16   the piece of management information being held, in correspondence with the timer module;

17          transmitting the event start time information and the piece of management  
18   information being held to the apparatuses that are identified by the apparatus identifiers being  
19   held;

20          receiving a standard time acquisition request together with a piece of management  
21   information from each of the apparatuses; and

22          transmitting, to each of the apparatuses a standard time that is identified by the  
23   piece of management information attached to the standard time acquisition request.

1        29. (New) An apparatus comprising a machine readable medium containing  
2 instructions which, when executed by a machine, cause the machine to perform operations  
3 comprising:

4            receiving from outside (a) event start time information that indicates an event start  
5 time at which one or more events should be started by two or more apparatuses on the network,  
6 (b) a module identifier of a timer module, (c) event type information indicating an event type for  
7 each of the one or more events, and (d) apparatus identifiers of apparatuses that should execute  
8 the one or more events;

9            holding the event start time information, module identifier, event type  
10 information, and apparatus identifiers received;

11            requesting the timer module, which is identified by the module identifier being  
12 held to output a standard time;

13            receiving the standard time from the timer module; and

14            transmitting the event start time information, event type information, and standard  
15 time being held to the apparatuses identified by the apparatus identifiers being held.

1        30. (New) An apparatus comprising a machine readable medium containing  
2 instructions which, when executed by a machine, cause the machine to perform operations  
3 comprising:

4            receiving designation by a user of a timer module among the plurality of timer  
5 modules, of the timer module to be used as a standard timer module for synchronization;

6            requesting the designated timer module to output a standard time;

7       receiving the standard time from the requested timer module; and  
8       transmitting the received standard time to the other timer modules among the  
9       plurality of timer modules excluding the timer module that output the standard time, and  
10      instructing the other timer modules to synchronize times thereof with the transmitted standard  
11      time.

1           31. (New) An apparatus comprising a machine readable medium containing  
2       instructions which, when executed by a machine, cause the machine to perform operations  
3       comprising:

4           receiving (a) event start time information that indicates an event start time at  
5       which one or more events should be started by two or more apparatuses on the network, (b) a  
6       piece of management information, and (c) event type information indicating an event type for  
7       each of the one or more events, from an apparatus that vicariously manages the times clocked by  
8       the plurality of timer modules using different pieces of management information assigned to the  
9       plurality of timer modules;

10          holding the received event start time information, piece of management  
11       information, and event type information;

12          transmitting a time acquisition request with the received piece of management  
13       information attached thereto;

14          receiving a standard time identified by the transmitted piece of management  
15       information;

16                   judging whether the event start time is reached by comparing the received  
17                   standard time with the event start time indicated by the event start time information being held;

18                   and

19                   starting to execute an event that is indicated by the event type information being  
20                   held when the judging means judges that the event start time is reached.

1                 32. (New) An apparatus comprising a machine readable medium containing  
2                 instructions which, when executed by a machine, cause the machine to perform operations  
3                 comprising:

4                   clocking a local time for the time managing apparatus;  
5                   receiving (a) event start time information that indicates an event start time at  
6                   which one or more events should be started by two or more apparatuses on the network, (b) event  
7                   type information indicating an event type for each of the one or more events, from an apparatus  
8                   on the network, the presetting information receiving means also continuously receiving a  
9                   standard time from a time module;

10                  calculating a time difference between the local time and the standard time;

11                  holding the received event start time information and type information and the  
12                  calculated time difference time;

13                  continuously judging whether the event start time is reached by continuously  
14                  receiving the local time, acquiring a corrected time by correcting the received local time using  
15                  the time difference being held, and comparing the acquired corrected time with the event start  
16                  time indicated by the event start time information being held; and starting to execute an event

17   that is indicated by the event type information being held when it has been judged that the event  
18   start time is reached.